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2008

Test 1937: New Holland T8050

Nebraska Tractor Test Laboratory

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NEBRASKA OECD TRACTOR TEST 1937-SUMMARY 612

NEW HOLLAND T8050 DIESEL

19 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1109 rpm)					
274.86 (204.96)	2199	16.94 (64.14)	0.432 (0.263)	16.22 (3.20)	
Standard Power Take-off Speed (1000 rpm)					
311.04 (231.95)	1984	18.24 (69.06)	0.411 (0.250)	17.05 (3.36)	
Maximum Power (1 hour)					
311.04 (231.95)	1984	18.24 (69.06)	0.411 (0.250)	17.05 (3.36)	

VARYING POWER AND FUEL CONSUMPTION

274.86 (204.96)	2199	16.94 (64.14)	0.432 (0.263)	16.22 (3.20)	Air temperature
237.97 (177.46)	2235	15.84 (59.97)	0.466 (0.284)	15.02 (2.96)	80°F (26°C)
182.12 (135.81)	2284	13.78 (52.16)	0.530 (0.323)	13.22 (2.60)	Relative humidity
123.40 (92.02)	2320	11.06 (35.18)	0.628 (0.382)	11.16 (2.20)	45%
62.82 (46.84)	2362	7.05 (22.43)	0.787 (0.479)	8.91 (1.75)	Barometer
2.11 (1.57)	2399	4.15 (13.19)	13.787 (8.386)	0.51 (0.10)	28.98" Hg (98.14 kPa)

Maximum torque - 994 lb.-ft. (1348 Nm) at 1500 rpm

Maximum torque rise - 51.6%

Torque rise at 1797 engine rpm - 37%

Power increase at 1984 engine rpm - 13.1%

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—7th Gear									
234.70 (175.01)	20322 (90.40)	4.33 (6.97)	2202	4.0	0.503 (0.306)	13.94 (2.75)	189 (87)	71 (22)	29.08 (98.48)
75% of Pull at Maximum Power—7th Gear									
182.42 (136.03)	15242 (67.80)	4.49 (7.22)	2255	2.5	0.572 (0.348)	12.26 (2.41)	189 (87)	82 (28)	29.05 (98.37)
50% of Pull at Maximum Power—7th Gear									
125.44 (93.54)	10148 (45.14)	4.64 (7.46)	2306	1.6	0.700 (0.426)	10.00 (1.97)	184 (84)	82 (28)	29.03 (98.31)
*75% of Pull at Reduced Engine Speed—10th Gear									
182.65 (136.20)	15133 (67.31)	4.53 (7.28)	1500	2.5	0.489 (0.298)	14.32 (2.82)	192 (89)	82 (28)	29.03 (98.31)
*50% of Pull at Reduced Engine Speed—10th Gear									
127.03 (94.72)	10268 (45.67)	4.64 (7.47)	1520	1.5	0.519 (0.316)	13.51 (2.66)	185 (85)	85 (29)	29.02 (98.27)

*Auto field mode engaged - CGS

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: September 19 -29, 2008

Manufacturer: CNH America LLC, 700 State St. Racine, Wi. 53404 USA

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8416 Fuel weight 7.007 lbs/gal (0.840 kg/l) Oil SAE 15W40 API service classification CI-4 Transmission and hydraulic lubricant Case IH Hy-Tran Ultra fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 29.5 hours

ENGINE: Make CNH Engine Corporation Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *46912795 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.488" x 5.689" (114.0 mm x 144.5 mm) **Compression ratio** 17.6 to 1 **Displacement** 540 cu in (8849 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable blade pitch fan.

ENGINE OPERATING PARAMETERS: Fuel rate: 115.7-127.6 lb/h (52.5 - 57.9 kg/h) **High idle:** 2380-2420 rpm **Turbo boost:** nominal 23.2 - 26.1 psi (160 - 180 kPa) as measured 24.9 psi (172 kPa)

CHASSIS: Type front wheel assist with duals **Serial No.** *Z8RW04591 ***Tread width** rear 64.0" (1626 mm) to 129.0" (3277 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 129.3" (3284 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.96 (3.16) second 2.25 (3.63) third 2.60 (4.19) fourth 2.98 (4.80) fifth 3.42 (5.51) sixth 3.93 (6.32) seventh 4.57 (7.37) eighth 5.25 (8.45) ninth 6.06 (9.75) tenth 6.95 (11.18) eleventh 7.97 (12.82) twelfth 9.14 (14.71) thirteenth 11.39 (18.33) fourteenth 13.06 (21.02) fifteenth 15.06 (24.24) sixteenth 17.28 (27.81) seventeenth 19.82 (31.90) eighteenth 22.74 (36.59) nineteenth 24.86 (40.00) (1900 engine rpm) reverse 2.83 (4.55), 3.24 (5.22), 6.59 (10.61), 7.56 (12.17) **Clutch** multiple wet disc electrohydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1988 engine rpm or 1000 rpm at 1984 engine rpm **Unladen tractor mass** 24095 lb (10929 kg)

DRAWBAR PERFORMANCE **UNBALLASTED - FRONT DRIVE ENGAGED** **MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	°C Air dry bulb	Barom. inch Hg (kPa)
5th Gear									
201.79 (150.48)	24562 (109.25)	3.08 (4.96)	2236	9.5	0.560 (0.341)	12.51 (2.46)	185 (85)	69 (21)	29.09 (98.51)
6th Gear									
227.90 (169.95)	24131 (107.34)	3.54 (5.70)	2177	7.4	0.524 (0.319)	13.36 (2.63)	189 (87)	70 (21)	29.09 (98.51)
7th Gear									
251.30 (187.40)	23141 (102.94)	4.07 (6.55)	2105	5.5	0.505 (0.307)	13.88 (2.73)	191 (88)	72 (22)	29.08 (98.48)
8th Gear									
262.76 (195.94)	22405 (99.66)	4.40 (7.08)	1977	5.3	0.480 (0.292)	14.60 (2.88)	193 (89)	74 (23)	29.07 (98.44)
9th Gear									
268.51 (200.23)	19702 (87.64)	5.11 (8.23)	1964	3.9	0.466 (0.284)	15.03 (2.96)	193 (89)	75 (24)	29.07 (98.44)
10th Gear									
268.30 (200.07)	16939 (75.35)	5.94 (9.56)	1967	2.6	0.469 (0.285)	14.95 (2.94)	194 (90)	77 (25)	29.07 (98.44)
11th Gear									
266.49 (198.72)	14702 (65.40)	6.80 (10.94)	1958	2.4	0.471 (0.287)	14.86 (2.93)	194 (90)	78 (26)	29.07 (98.44)
12th Gear									
262.95 (196.08)	12524 (55.71)	7.87 (12.67)	1974	2.0	0.477 (0.290)	14.68 (2.89)	193 (89)	79 (26)	29.06 (98.41)
13th Gear									
262.64 (195.85)	10148 (45.14)	9.71 (15.62)	1941	1.5	0.476 (0.290)	14.72 (2.90)	194 (90)	81 (27)	29.05 (98.37)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the primary fuel filter was maintained at 104°F (40°C). The performance results on this summary were taken from OECD tests conducted under the Code II Test Code Procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1937**, Nebraska Summary 612, December 23, 2008.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At no load in 7th gear	75.0
Bystander in 18th gear	89.2

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires -No., size, ply & psi (kPa)	Six 520/85R42;**,10(70)	Four 520/85R42;**,10(70)
Ballast - Triples (total)	2020 lb (916 kg)	None
- Cast Iron (total)	3650 lb (1656 kg)	None
Front Tires -No., size, ply & psi (kPa)	Four 420/90R30;**,13(90)	Two 420/90R30;**,14(95)
Ballast - Duals (total)	1040 lb (472 kg)	None
- Cast Iron (total)	3520 lb (1597 kg)	None
Height of Drawbar	17.5 in (445 mm)	17.5 in (445 mm)
Static Weight with operator - Rear	21260 lb (9643 kg)	16390 lb (7434 kg)
- Front	13240 lb (6006 kg)	7880 lb (3574 kg)
- Total	34500 lb(15649 kg)	24270 lb(11008 kg)

DRAWBAR PERFORMANCE
BALLASTED - Front Drive engaged
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
224.26 (167.23)	35918 (159.77)	2.34 (3.77)	2197	8.3	0.530 (0.322)	13.23 (2.61)	188 (86)	68 (20)	28.93 (97.97)
4th Gear									
243.05 (181.24)	34491 (153.42)	2.64 (4.25)	2123	6.7	0.520 (0.316)	13.49 (2.66)	193 (89)	69 (21)	28.93 (97.97)
5th Gear									
254.18 (189.54)	33349 (148.34)	2.86 (4.60)	1988	5.7	0.489 (0.298)	14.32 (2.82)	194 (90)	73 (23)	28.93 (97.97)
6th Gear									
260.95 (194.59)	29321 (130.43)	3.34 (5.37)	1982	4.4	0.484 (0.295)	14.47 (2.85)	194 (90)	71 (22)	28.93 (97.97)
7th Gear									
267.88 (199.76)	25640 (114.05)	3.92 (6.31)	1979	3.4	0.471 (0.287)	14.87 (2.93)	193 (89)	65 (18)	29.03 (98.31)
8th Gear									
269.43 (200.91)	22438 (99.81)	4.50 (7.25)	1969	2.7	0.469 (0.285)	14.95 (2.95)	193 (89)	65 (18)	29.03 (98.31)
9th Gear									
266.00 (198.36)	19222 (85.50)	5.19 (8.35)	1964	2.4	0.472 (0.287)	14.85 (2.93)	193 (89)	65 (18)	29.02 (98.27)
10th Gear									
263.32 (196.35)	16458 (73.21)	6.00 (9.66)	1972	2.0	0.479 (0.291)	14.63 (2.88)	193 (89)	65 (18)	29.02 (98.27)
11th Gear									
259.16 (193.25)	14176 (63.06)	6.86 (11.03)	1958	1.8	0.485 (0.295)	14.46 (2.85)	193 (89)	65 (18)	29.04 (98.34)
12th Gear									
258.82 (193.00)	12275 (54.60)	7.91 (12.73)	1968	1.4	0.486 (0.295)	14.43 (2.84)	193 (89)	65 (18)	29.06 (98.41)
13th Gear									
252.74 (188.47)	9583 (42.63)	9.89 (15.92)	1966	0.9	0.498 (0.303)	14.07 (2.77)	193 (89)	65 (18)	29.07 (98.44)

HYDRAULIC PERFORMANCE

CATEGORY: IVN

Quick Attach: Yes

OECD Static test

Maximum force exerted through whole range: 19795 lb (88.1 kN)

Mega flow pump

i) Sustained pressure at compensator cutoff: 3142 psi (217 bar) . . . 2949 psi (203 bar)

ii) Pump delivery rate at minimum pressure
and rated engine speed: 44.0 GPM (166.6 l/min) 31.4 GPM (118.9 l/min)

Combined flow: 75.4 GPM (285.5 l/min)

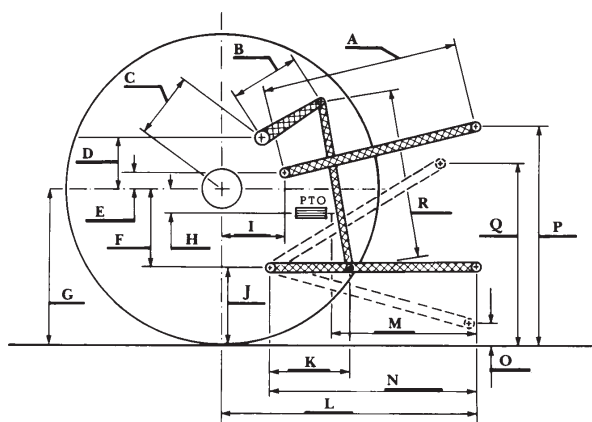
iii) Pump delivery rate at maximum

hydraulic power: 41.8 GPM (158.2 l/min) 31.9 GPM (120.8 l/min)

Delivery pressure: 2946 psi (203 bar) 2705 psi (186 bar)

Power: 71.3 HP (53.2 kW) 50.3 Hp (37.5 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	24.6	625
B	20.5	520
C	22.9	581
D	20.7	525
E	10.5	266
F	15.7	400
G	36.4	925
H	3.5	90
I	20.9	530
J	20.7	525
K	30.2	768
L	46.1	1170
*L'	53.3	1354
M	20.1	511
N	38.2	970
O	9.0	230
P	48.2	1225
Q	37.9	962
R	39.7	1008

*L' to Quick Attach ends



NEW HOLLAND T8050 DIESEL

Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln